

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
18 September 2003 (18.09.2003)

PCT

(10) International Publication Number
WO 03/076466 A1(51) International Patent Classification⁷: C07K 14/47

(21) International Application Number: PCT/KR03/00455

(22) International Filing Date: 8 March 2003 (08.03.2003)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:

10-2002-0012409	8 March 2002 (08.03.2002)	KR
10-2002-0015217	21 March 2002 (21.03.2002)	KR
10-2002-0015219	21 March 2002 (21.03.2002)	KR

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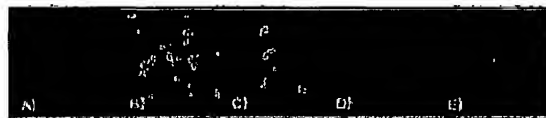
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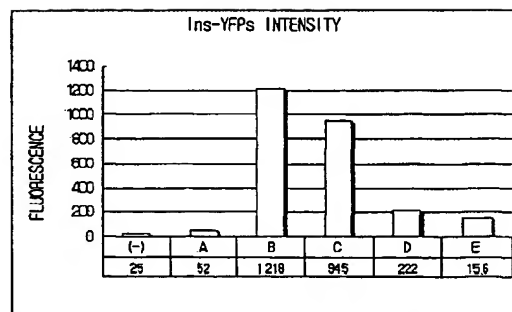
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[Continued on next page]

(54) Title: ENHANCED INSERTED YELLOW FLUORESCENCE PROTEIN AND ITS APPLICATION



A



B

(57) Abstract: Disclosed are mutated genes for green fluorescence proteins and enhanced inserted YFPs expressed therefrom. The mutant proteins not only maintain their fluorescence even at 37 °C, but also exhibit about 20 times stronger fluorescence intensities in comparison to the conventional fluorescence proteins. Accordingly, the mutant fluorescence proteins of the present invention can be used as biosensors for detecting and analyzing the bioactivities of desired materials.



(81) **Designated States (national):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR03/00455

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 C07K 14/47

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 : C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korea Patent and Applications for Inventions since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubMed, Delphion

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	Nagai T., et al. "Circularly permuted green fluorescent proteins engineered to sense Ca ²⁺ " Proc. Natl. Acad. Sci. USA, 2001, Vol. 98(6): pages 3197-3202, See the abstract.	1-7, 10-11 8-9, 12-15
Y A	Griesbeck O., et al. "Reducing the environmental sensitivity of yellow fluorescent protein" J. Biol. Chem., 2001, Vol. 276: pages 29188-29194, See the abstract.	1-7, 10-11 8-9, 12-15
Y A	Luo K.Q., et al. "Application of the fluorescence resonance energy transfer method for studying the dynamics of caspase-3 activation during UV-induced apoptosis in living Hela cells" Biochem. Biophys. Res. Commun., 2001, Vol. 283: pages 1054-1060, See the abstract.	1-7, 12-13 8-11, 14-15
Y A	Tyas L., et al. "Rapid caspase-3 activation during apoptosis revealed using fluorescence-resonance energy transfer" EMBO Rep., 2000, Vol. 1(3): pages 266-270, See the abstract.	1-7, 12-13 8-11, 14-15
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A	US 5998204A (Tsien et al.), Dec. 07, 1999, See the whole document.	1-15

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Date of the actual completion of the international search

23 JUNE 2003 (23.06.2003)

Date of mailing of the international search report

24 JUNE 2003 (24.06.2003)

Name and mailing address of the ISA/KR

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Republic of Korea

Facsimile No. 82-42-472-7140

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Telephone No. 82-42-481-5601



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR03/00455

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5998204 A	Dec. 07, 1999	WO 9840477 A1 AU 6702398 A1 EP 0970199 A1	Sep. 17, 1998 Sep. 29, 1998 Jan. 12, 2000